

REMARKS

Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

Claims 21-40 were pending in the application. Amendments have been made to claims 21 and 29. Claims 21-40 remain pending and are submitted for reconsideration.

As a preliminary matter, Applicants note with appreciation the following actions taken by the Examiner: approval of the drawings, acknowledgement of Applicants' claim for foreign priority under 35 U.S.C. § 119(a)-(d), receipt of all certified copies of the priority documents and consideration of the prior art references identified in the Information Disclosure Statement filed on September 27, 2006.

Objection to the Information Disclosure Statement

The Information Disclosure Statement filed on September 27, 2006 stands objected to for failing to list the International Search Report citing the references considered by the Examiner. Applicants submit herewith a corrected copy of the PTO/SB/08 form listing the International Search Report as well as the references previously considered by the Examiner. A Copy of the International Search Report has already been submitted. Applicants respectfully request the Examiner to return an initialed and signed copy of the corrected PTO/SB/08 form in the next communication.

Objection to the Specification

The title stands objected to for not being descriptive. Applicants have amended the title to overcome this objection. Applicants respectfully submit that the present title is clearly indicative of the invention to which the claims are directed. Reconsideration and withdrawal of the objection are respectfully requested.

Objection to the Claims

Claims 21-40 stand objected to for a minor informality. Applicants have amended independent claim 21 in accordance with the Examiner's helpful suggestion found on page 2

of the Office Action. Therefore, it is respectfully submitted that the claims are now in proper form. Reconsideration and withdrawal of the outstanding objection are respectfully requested.

Rejection under 35 U.S.C. § 102

Claims 21, 22, 29 and 34-37 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent Application Publication No. 2003/0072699 to Tonkovich et al. (hereinafter "Tonkovich"). The rejection should be withdrawn because the cited reference fails to describe each and every element of any of the claims.

Embodiments of the present invention are directed to a fuel reformer. The fuel reformer according to amended sole independent claim 21 includes a reforming element, a combustion element and plural supply holes. The reforming element includes at least one reforming catalyst passage supporting a reforming catalyst which generates reformat gas from fuel. The combustion element has at least one combustion gas passage, which heats the reforming element by the heat of combustion gas generated by burning the generated reformat gas with air in the at least one combustion gas passage. The reforming element and combustion element are laminated in the fuel reformer. The plural supply holes are arranged in a line along the at least one combustion gas passage. Each supply hole communicates with the at least one combustion gas passage. At least part of the generated reformat gas is burnt downstream of each supply hole.

According to one embodiment of the present invention as now recited in amended independent claim 21, *the plural supply holes are provided between the reforming element and the combustion element* and *at least part of the generated reformat gas is supplied to the at least one combustion gas passage via each supply hole from the reforming element.* Support for this subject matter recited in independent claim 21 can at least be found on page 3, lines 31-38, page 4, lines 8-18, page 6, lines 19-22 and 36-41, page 7, lines 26-30 and FIGS. 2 and 3 of the present specification. With these features and arrangements, combustion temperature distribution in the combustion gas passage is smoothed and local increase of the combustion temperature in any specific region is eliminated (Specification, page 6, lines 44-

46). One exemplary embodiment of the present invention is illustrated in FIGS. 2 and 3 which shows the plural supply holes (13) provided between the reforming element (7) and the combustion element (8) and at least part of the generated reformat gas is supplied to the at least one combustion gas passage (11) via each supply hole (13) from the reforming element (7). It is respectfully submitted that the cited reference fails to disclose these claimed features and arrangements as well as the added benefits provided.

The Tonkovich reference is directed to integrated combustion reactors wherein combustion chambers are in direct thermal contact to reaction chambers for an endothermic reaction (Tonkovich, abstract, lines 1-4). As illustrated in FIG. 5, Tonkovich appears to disclose a reformat composition flowing through open channel 52, combustion fuel flowing through open channel 54 and air or other oxygen-composition in channels 56 flowing through aperture 58 and into channel 54 where the oxygen reacts with hydrogen on combustion catalyst 53 (paragraph 50, lines 1-9). Tonkovich's FIG. 6 clearly shows plural supply holes (62) are provided between a H₂ mixture passage (element 54 in FIG. 5) and an air passage (element 56 in FIG. 5) to form a combustion element. Therefore, Tonkovich fails to disclose or even suggest *the plural supply holes are provided between the reforming element and the combustion element* as now required by the claims.

Likewise, Tonkovich fails to disclose *at least part of the generated reformat gas is supplied to the at least one combustion gas passage via each supply hole from the reforming element*. To the contrary and as illustrated in FIGS. 5 and 6 of Tonkovich, the H₂ mixture is supplied to a combustion gas passage from a H₂ supply passage.

Thus, according to an embodiment of the present invention, a compact fuel reformer with a combustion element that is made thinner than the combustion element shown in FIGS. 5 and 6 of Tonkovich can be realized. This is because the present invention does not require a combustion passage and an extra H₂ mixture passage as required by Tonkovich. Instead, the present invention requires plural supply holes provided between the reforming element and the combustion element and at least part of the generated reformat gas supplied to the at least one combustion gas passage via each supply hole from the reforming element.

For anticipation, however, “every element and limitation of the claimed invention must be found in a single prior art reference, arranged as in the claim.” *Brown v. 3M*, 60 USPQ2d 1375 (Fed. Cir. 2001). Tonkovich fails to disclose each of these features and arrangements of independent claim 21.

In view of the fact that the Tonkovich reference fails to disclose each of the claimed features and arrangements indicated above, this reference cannot be said to anticipate nor can it be said to render obvious the invention which is the subject matter of independent claim 21. Thus, independent claim 21 is allowable.

Since independent claim 21 is allowable, dependent claims 22, 29 and 34-37 are also allowable by virtue of their direct or indirect dependence from allowable independent claim 21 and for containing other patentable features. Further remarks regarding the asserted relationship between any of the claims and the cited reference are not necessary in view of their allowability. Applicants’ silence as to the Office Action’s comments is not indicative of being in acquiescence to the stated grounds of rejection.

Rejections under 35 U.S.C. § 102/§ 103 and § 103

Claims 23-28, 30-33 and 40 are rejected under 35 U.S.C. § 102(b) as anticipated by or in the alternative, under 35 U.S.C. § 103(a) as obvious over Tonkovich. Claims 38 and 39 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Tonkovich in further view of U.S. Patent Application Publication No. 2005/0172556 to Powell et al.

Since each of claims 23-28, 30-33 and 38-40 depends from independent claim 21, these claims are therefore allowable for at least the reasons set forth above without regard to the further patentable features contained in these dependent claims.

Conclusion

Applicants believe that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

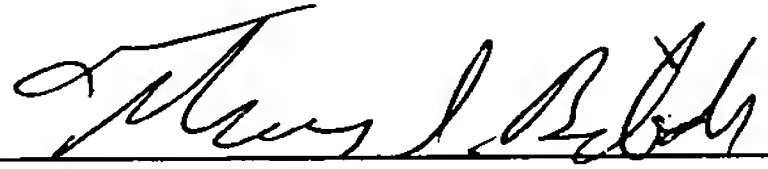
The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.


The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing or a credit card payment form being unsigned, providing incorrect information resulting in a rejected credit card transaction, or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicants hereby petition for such extension under 37 C.F.R. §1.136 and authorize payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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